

**Amendments to the Drawings**

The attached sheet of drawings includes changes to Fig. 11. This sheet, which includes Figs. 10 and 11, replaces the original sheet including Figs. 10 and 11. In Fig. 11, an instance of reference numeral **100** has been changed to **100'**.

Attachment: Replacement sheet  
Annotated sheet showing changes

### Remarks

The specification and drawings are amended to bring the specification and drawings into conformity.

Claims 5 - 10, 17, 18, 22, 26, 28, 33 - 35, 37, 38, 41, 46 - 49 and 52 - 55 are amended herein, and claims 1 - 4, 11 - 16, 29 - 32, 36, 39, 40 and 56 - 58 are cancelled without disclaimer or prejudice to Applicant's right to pursue claims to cancelled subject matter by way of one or more continuing applications. No new matter is introduced by any of the amendments, and entry thereof is requested.

Claims 1 - 58 were in the application as originally filed. Claims 56 - 58 (said to be drawn to a process) were withdrawn previously as being directed to a nonelected invention (Applicant elected claims 1 - 55, said to be drawn to a product). Subsequently claims 4, 5, 9, 14, 22 - 24, 32, 33, 35, 37 and 46 - 48 were withdrawn as being directed to a nonelected species. Certain of the withdrawn claims should now be considered, however (namely, claims 5, 9, 22 - 24, 37, 46 - 48), as they have been amended to depend from allowable generic or linking claims. As a result of cancellation and amendment, claims 5 - 10, 17, 18, 22 - 24, 26, 28, 33 - 35, 37, 38, 41, 46 - 49 and 52 - 55 are in the application and should now all be under consideration. Reconsideration of the application, as amended, is requested.

Applicants thank Examiner Chambliss for initiating a telephonic interview with Applicants' representative, undersigned, on March 3, 2005 (prior to mailing the Office action), and for preparing an Interview Summary of the substance of the interview.

The points raised in the Office action will now be addressed, beginning with the drawings objections.

### Drawings Objections

The drawings were objected to under 37 CFR 1.84(p)(5), the Examiner noting that the drawings include reference characters **721** and **817**, which were not mentioned in the description, and that the drawings do not include a reference sign **100'**. The specification is amended herein to insert the missing reference characters, and FIG. 11 is amended to change one instance of

reference numeral **100** to **100'**. No new matter is introduced by these amendments, and entry thereof is requested.

The drawings were further objected to under 37 CFR 1.83(a), the Examiner asserting that:

the first package that is a LGA package, wherein the memory package stack comprises a first package affixed onto a first surface of a package stack substrate and a second package affixed onto a second surface of the package stack substrate must be shown or the feature(s) cancelled from the claim(s).

This drawings objection is traversed. No further drawing is necessary for an understanding of the subject matter of Applicants' invention (*see*, 35 U.S.C. §113). Applicants' specification is summary states that in embodiments where the memory packages are configured as stacked memory package assemblies the overlying memory packages in each stack may be connected to a common stacked memory package assembly substrate, and in such embodiments the memory packages may be of a ball grid array (BGA) type or of a land grid array (LGA) type (*see, e.g.*, paragraph [0008]). Where the memory packages are BGA packages configured as memory package stacks, an upper package in the stack is connected by way of its array of balls to the upper surface of the common memory assembly substrate and a lower package in the stack is inverted and connected by way of its array of balls to the lower surface of the common memory assembly substrate (*see, e.g.*, paragraph [0011]). Where the memory packages are LGA packages in each stack may be wire bonded to a common memory assembly substrate, and in some such embodiments a lower package in each stack is affixed to, and is wire bond connected to, a lower surface of the common memory assembly substrate, and an upper package in each stack is inverted and affixed to, and is wire bond connected to, an upper surface of the common memory assembly substrate (*see, e.g.*, paragraphs [0012], [0017], [0022]).

Configurations in which the memory stacks are BGA packages configured as memory package stacks, comprising a first package affixed onto a first surface of a package stack substrate and a second package affixed onto a second surface of the package stack substrate are clearly shown by way of example in FIG. 3 and are described for example with reference thereto (*see, e.g.*, paragraphs [0058]; *see also*, FIGs. 5A, 5B, 6A and 6C), and an upper package in the stack is connected by way of its array of balls to the upper surface of the common memory assembly substrate and a lower package in the stack is inverted and connected by way of its array of balls to

the lower surface of the common memory assembly substrate. Attachment of LGA packages to a common package stack substrate is clearly shown by way of example in FIG. 7 (in this example, two LGA packages are stacked over and are electrically connected by wire bonds to one side of the common memory assembly substrate) and is described for example with reference thereto (*see, e.g.,* paragraph [0068]). The person of ordinary skill would readily understand that in place of the BGA packages shown in FIGs. 5A, 6A, first and second LGA packages can be affixed (as shown in FIG. 7) onto first and second surfaces of the common memory stack substrate, without reference to a particular figure showing such an embodiment.

In view of the foregoing, it is not necessary for an understanding of the subject matter of Applicants' invention (*see*, 35 U.S.C. §113) that the drawings include a drawing showing a "memory package stack comprising a first package affixed onto a first surface of a package stack substrate and a second package affixed onto a second surface of the package stack substrate"; and this drawings objection should be withdrawn.

Rejections under 35 U.S.C. § 102(b), 35 U.S.C. § 103(a)

Claims 1 - 3, 8, 11 - 13, 15, 16, 29 - 31, 36, 39, 40, 54 and 55 were rejected under 35 U.S.C. § 102(b) as being anticipated by Watanabe *et al.* U.S. 4,982,265 ("Watanabe") or, alternatively, as being anticipated by Stoller U.S. 6,392,896 ("Stoller"); and claims 1 - 3, 11 - 13, 29 - 31, 54 and 55 were rejected under 35 U.S.C. § 102(e) as being anticipated by Streltsov U.S. 6,829,147 ("Streltsov")

Claims 6, 10, 34, 38 and 49 were rejected under 35 U.S.C. § 103(a) for obviousness over Watanabe in view of Michael U.S. 6,778,390 ("Michael") and Huang *et al.* U.S. 6,495,912 ("Huang") or, alternatively, over Stoller in view of Michael and Huang.

Applicant appreciates the Examiner's detailed recitation of his arguments and the reasons for the rejections.

Applicant does not agree in all particulars with the Examiner's reading of the art or of the relationship of the art to Applicant's claimed invention. However, to further prosecution of this Application to allowance, the Application is amended herein, in accordance with the Examiner's indication of allowability (*see below*), without disclaimer or prejudice to Applicant's right to

prosecute claims to subject matter of claims canceled herein by way of one or more continuing applications. Accordingly, the art rejections are not particularly addressed here.

Allowable Subject Matter

Applicant appreciates the Examiner's indication of allowability of certain of the claims.

Claim 17 - 21, 26, 28, 41 - 45, 51 and 53 were deemed to be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

Thus, claim 17 is rewritten in independent form, including all the limitations of claims 1/11/15/16; claim 26 is rewritten in independent form, including all the limitations of claims 1/8/10; claim 28 is rewritten in independent form, including all the limitations of claims 1/8/10; claim 41 is rewritten in independent form, including all the limitations of claims 29/39/40; claim 51 is rewritten in independent form, including all the limitations of claims 29/49; and claim 53 is rewritten in independent form, including all the limitations of claims 29/39/40. Claims 1 - 4, 11 - 16, 29 - 32, 36, 39, 40 and 56 - 58 are canceled. Claims 5 - 10, 18, 33 - 35, 37, 38, 46 - 49 and 52 - 55 are amended to change their dependency recitations in view of these amendments and cancellations.

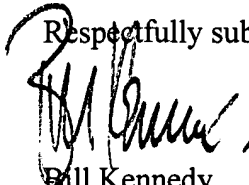
In view of the foregoing, all the claims in the application—that is, claims 5 - 10, 17 - 28, 33 - 35, 37, 38 and 41 - 55—are believed to be in condition for allowance, and action to that effect is respectfully requested.

This Amendment is being filed within the third month following the three months' shortened statutory period set by the Examiner for response to the Office action and, accordingly, it is accompanied by a Petition for three months' extension of time and a fee or fee authorization therefor. In the event the Examiner may determine that additional fee[s] may be required in connection with the filing of this paper, petition is hereby made therefor, and the Commissioner is authorized to charge any additional fee (or to credit any overpayment) to Deposit Account No. 50-0869 (CPAC 1041-2).

This Amendment is accompanied by a supplemental Information Disclosure Statement and a fee therefor.

If the Examiner determines that a conference would facilitate prosecution of this application, the Examiner is invited to telephone Applicant's representative, undersigned, at the telephone number set out below.

Respectfully submitted,

  
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APPENDIX

1 Replacement Sheet

1 Annotated Sheet showing changes

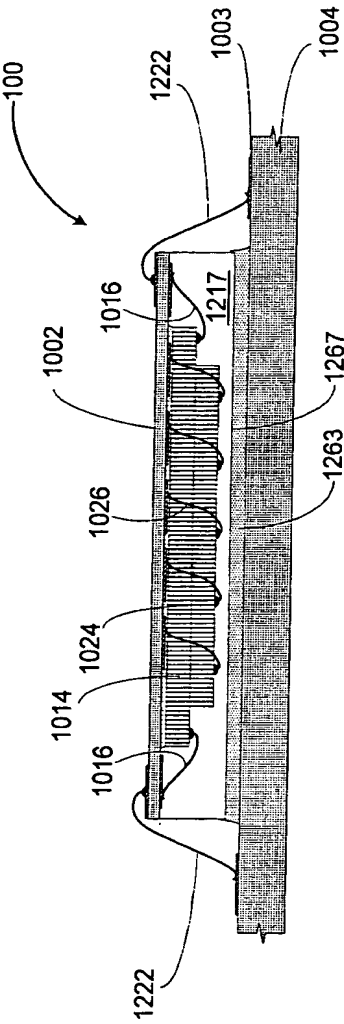


Fig. 10

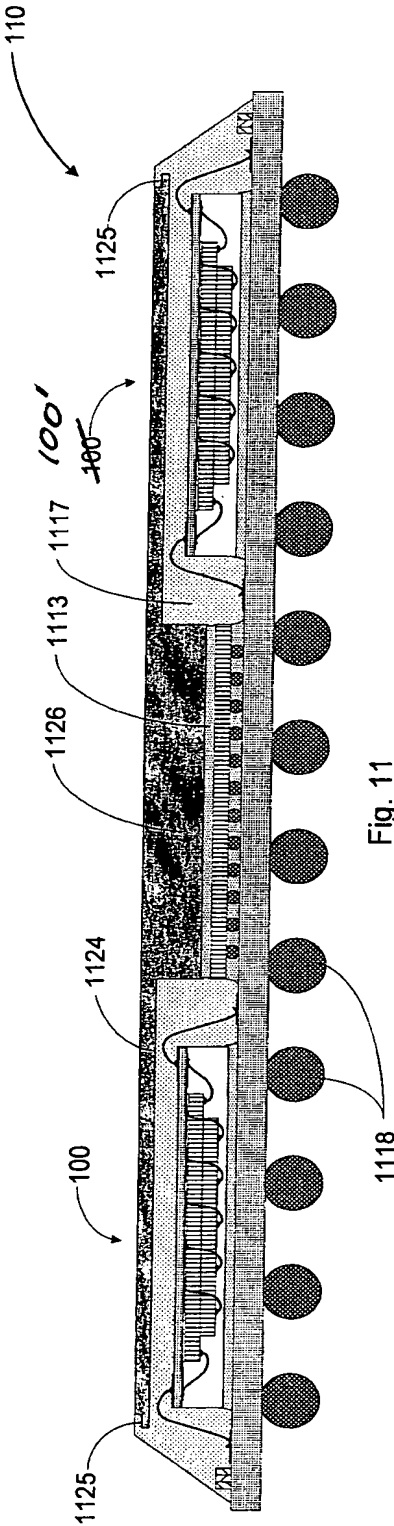


Fig. 11